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"To enrich lives through effective and caring service"

August 4, 2016

TO: Supervisor Hilda L. Solis, Chair
Supervisor Mark Ridley-Thomas
Supervisor Sheila Kuehl
Supervisor Don Knabe
Supervisor Michael D. Antonovich

FROM: Dave Chittenden
Chief Deputy Director

BOARD MOTION OF JUNE 28, 2016, ITEM R-2 - FOLLOW-UP REGARDING STATUS OF SOLAR DEPLOYMENTS

At your Board meeting on June 28, 2016, during discussion of the possibility of power outages caused by depleted natural gas supplies (item R-2), Supervisor Solis requested an update on solar energy projects for Los Angeles County businesses and households.

Solar Strategy for County Buildings

Background

On November 25, 2014, your Board instructed ISD to initiate a program exploring how solar installations could be implemented at County facilities under available market financing models or using upfront capital provided by the County.

On May 26, 2015, ISD reported back on the results of an initial solicitation seeking pricing for solar installations using its Energy Efficiency Projects Master Agreement (EEPMA) to establish a Power Purchasing Agreement (PPA). PPAs provide for solar installations under long-term financing arrangements. ISD compared the PPA price proposals against an upfront capital option, and recommended using PPAs to install solar equipment at County sites.

On July 21, 2015, your Board instructed ISD to proceed with an award of contract, as described in the May 26, 2015 Board report (Phase One), and to proceed with additional solicitations for solar installations at County sites under the PPA model.

On January 5, 2016, ISD reported back on the (1) status of the Phase One, (2) plans for Phase Two, and (3) future PPA solicitations for installing solar at County sites.

Phase One Status

In its January 5, 2016 status report to your Board regarding the Phase One pilot project, ISD noted the completion of a competitive solicitation for solar installations at nine County sites. In addition, ISD reported the launch of the Phase Two solicitation for twenty-one additional sites.

Phase One solar projects were awarded to SunEdison. After execution of the EEPMA Work Order and PPAs for each site, SunEdison conducted its contractually-allowed due diligence and determined that the projects required additional work, which would substantially increase project costs at all sites. ISD negotiated with SunEdison, but ultimately denied most of the proposed cost increases. Both parties agreed to mutually terminate the PPAs for all sites. On May 17, 2016, your Board approved the mutual termination of Phase One's nine solar PPAs with SunEdison.

Because the Phase One proposals were received more than a year earlier, in late March 2015, and the firm-offer period for that solicitation expired in September 2015 and the proposals had then lapsed, ISD decided not to move forward with any other bidder for Phase One, with the intent of re-soliciting for those Phase One locations in a future phase.

Phase Two Status

On January 19, 2016, ISD received three proposals for the solar carport installations at twenty-one sites in response to the Phase Two EEPMA solicitation. The highest ranked proposer was asked to provide further information to clarify system design and capacity, as well as financing documentation and Special Purpose Entities (SPE) clarification prior to negotiations.

Submittal of financial reports is considered critical in determining the financial viability of the contractor, and the SPE designated by the contractor, to ensure completion of the project, adequate insurance and continuous maintenance and operation of the solar system at each of the County sites for the life of the 20-year PPA contract.

ISD has been in prolonged negotiations with the highest-ranked proposer since April 2016, but they have not yet provided the required financial reports for their SPE in compliance with Board policy. On July 28, 2016, that proposer was given a 30-day period to provide the required reports. Failure to do so will result in cancellation of this

solicitation, as the second and third placed vendors' costs have been determined to be higher than the incumbent utility's.

County Solar Strategy Update

Based on the above-mentioned difficulties encountered in both phases of the PPA program, ISD has amended the processes under EEPMA for soliciting PPAs and has re-evaluated its strategies and options for implementing solar at County locations. These processes and approaches are discussed below.

EEPMA PPA Process and Site Prioritization

ISD adjusted and expanded pre-bid processes to clarify its bid requirements to potential EEPMA PPA proposers. ISD is currently re-examining its selection of potential sites to ensure proposers prioritize electric rate structures and electrical equipment configurations that provide the greatest, potential cost savings by installing solar.

ISD has already eliminated most rooftop locations for potential solar installation, unless a roof has been recently replaced and meets structural requirements.

This may mean future EEPMA PPA solicitations will be limited to larger carport locations only or expanded to ground-mounted locations. Ground-mounted solar is neither rooftop nor carport canopy located, instead, the solar panels are installed on open space lots.

The County's Solar Map has been updated to identify solar potential on parking lot areas and should be publicly available in September of 2016. The Solar Map is also being updated to include solar potential on open spaces/vacant lots to include other filtering criteria to streamline permitting and construction of solar sites on open spaces/vacant lots. ISD is working with the Department of Public Works (DPW) and the Department of Regional Planning on this effort under the Solar Energy Action Committee (SEAC) chaired by DPW.

ISD will continue to investigate solar installations under a PPA model, given these experiences and the fact that the Federal government has extended the solar tax credits for solar project owners through 2020. A Phase Three PPA solicitation is expected to be available for bidders in January of 2017.

Solar Installations Using Capital

ISD has been installing energy efficiency projects throughout County facilities since the mid-1990's using a variety of funding sources including: third-party lease financing, California Public Utilities Commission (CPUC) funding, American Recovery and Reinvestment Act funding, litigation-related settlement funds from the Los Angeles Department of Water & Power, and funding from the Chief Executive Office (CEO).

As part of ISD's FY 2015/2016 Utilities Budget, the CEO authorized ISD to utilize up to $3.0 million in Extraordinary Maintenance funding to augment the funding described above for energy efficiency projects on an annual basis. Recently, ISD has received approval from the CEO to use a portion of these funds for solar projects at County facilities.

ISD has released an EEPMA solicitation for energy efficiency, solar canopy and ground-mount solar installations at seven County locations, and should receive responses to this solicitation by September 15, 2016. ISD will increase its outreach to these funding sources to assure their use in augmenting CEO funds for solar installations.

Lease Financing

Solar installations on County facilities may also be financed using traditional, market-based lease financing. Similar to PPAs, the solar provider or another third party would own the installations until they are paid off. The tax benefits accrue to the provider or third party. The County would finance the cost of installations over a negotiated term and interest rate.

Community Choice Aggregation

ISD is leading the efforts to develop a Community Choice Aggregation (CCA) program for the County. Under CCA, the County would procure wholesale power for Southern California Edison (SCE) customers in County unincorporated areas and potentially in CCA-eligible cities within the County. The County CCA preliminary studies indicate that greater levels of renewable power may be procured by the County and delivered to customers at retail rates at least 4% lower than SCE's rates. In addition, the County CCA could deliver wholesale power at 100% renewable levels at 10% lower than SCE's equivalent 100% renewable rates.

To the extent that solar at County facilities has multiple benefits such as: (1) increasing the amount of renewable energy used for electric supply throughout the region; (2) reducing the County's greenhouse gas responsibility due to electricity usage; and (3)

reducing the County's electricity bills thru use of renewable power; then County facilities utilizing County CCA-procured power at greater levels of renewables can accomplish all three of these as an alternative to physical, renewable energy installations.

The Final Report Back on the Preliminary Technical Analysis on the Feasibility of a Countywide CCA was completed and submitted to your Board on July 28, 2016.

Renewable Energy Strategy Summary

Each opportunity described above for increasing the installation and/or utilization of renewable resources in County facilities has plusses and minuses regarding achieving the benefits of renewable energy generation.

Using the Phase Two projects offered under the recent EEPMA PPA solicitation, ISD has re-examined the financial analysis under a PPA, lease financing, under capital investment and under a County CCA. Also, ISD has included in this analysis a summary of the environmental and other benefits. This analysis is included in this memorandum as Attachment 1 and is summarized in the table below.

Estimates for Solar Carports	**PPA**	**Lease Financing**	**Cash**	**CCA (50% renewables)**
Total kWh under Phase Two*	27, 890,000	27, 890,000	27,890,000	27,890,000
Total kWh converted to renewables**	11,045,000	11,045,000	11,045,000	13,950,000
Upfront Capital Required	$0	$0	$22,200,000	$0
Annual Energy $$ Savings	$104,000	$64,924	$850,000	$180,000
Present Value (20 years)	$1,700,000	$355,000	$7,000,000	$2,700,000
Annual GHG Reductions (Mtons CO2)***	7,800	7,800	7,800	9,800

* total energy consumed by Phase Two buildings annually
**total estimated energy replaced by renewable power installation
***total annual GHG reductions attributed to the replacement of SCE power with renewables

Solar installations at County locations still provide the qualitative benefits of carport shading which are not assessed in the analysis above. The cash option is less attractive if the value of the cash placed in other investments is netted from the analysis. The physical solar installations only convert a portion of the actual energy consumed by the buildings. CCA, through power procurement accounting, can provide 50% (or more) conversion since the renewable power provided to locations is based on the CCA's

entire power portfolio. The significant, recent, information is that the proposed CCA rate provides greater rate savings than the Phase Two PPA. The lease financing option assumed 5.5% interest rate over twenty years.

Solar Strategy for Private Buildings

The County is positively impacting the rate of solar installations on households through its residential Property Assessed Clean Energy (PACE) financing program. Since July of 2015, the County's PACE program has financed over 3,500 residential projects that included solar installations.

The County's commercial PACE program may also impact the rate of solar installations on non-residential buildings. To date the County and other commercial PACE programs (all of which receive technical support from the Southern California Regional Energy Network (SoCalREN)) has financed $4 million in commercial PACE projects which have included solar. Commercial PACE has a more rigorous approval process and the County, through the SoCalREN, is working to help transform this market.

A County Community Choice Aggregation (CCA) program may also increase the rate of residential and non-residential solar through design of retail electricity rates that encourage solar deployment.

CONCLUSION

ISD recommends that the utilization of PPAs, cash-as-augmentation to other funding, and CCA implementation, all taken together as part of an energy efficiency portfolio, will help the County achieve its clean energy economic and environmental goals. ISD will continue to pursue all of these options for County facilities.

In particular, ISD will continue to examine and implement solar or renewable power use under all options discussed in this report. Existing, limited funding will be used to implement solar, along with energy efficiency, at certain County locations. ISD will plan on a Phase Three PPA under its modified solicitation processes but only for those sites that are more confidently predicted to have the highest financial benefits and where quantitative benefits such as car shading will be a factor. And where physical installations are not deemed viable at County locations, those sites will be candidates for procuring higher levels of renewable power under a potential County CCA.

The utilization of solar energy production, whether onsite or procured remotely, will make a significant impact in reducing greenhouse gas production and achieving economic benefits in County operations.

ISD will continue to report annually to your Board on the progress on solar deployment under this revised strategy.

If you have any questions, please contact me at (323) 267-2103, via email dchittenden@isd.lacounty.gov, or your staff may contact Howard Choy at (323) 267-2160, via email hchoy@isd.lacounty.gov.

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Attachment

c: ISD Board Deputies
Chief Executive Officer
Chief Operating Officer
Executive Officer, Board of Supervisors
Chief Executive Office – Asset Management Branch

ATTACHMENT 1

Solar Financial Analysis Summary

	Location	Proposed Estimated	Business As Usual1 Generation and Delivery	Power Purchase Agreement Savings	Power Purchase Agreement NPV	Cash Purchase3 Savings	Cash Purchase3 NPV	LA Community Choice Energy (50% Green)4 Savings5	LA Community Choice Energy (50% Green)4 NPV	Municipal Lease Savings	Municipal Lease NPV
1	PH-ENVIRONMENTAL HEALTH	935,524.00	$4,087,895.88	$406,291.33	$64,845.32	$1,910,805.61	$951,764.26	$225,898.61	$170,317.39	$157,990.83	$67,787.10
2	ANTELOPE VALLEY SERVICE CENTER-	675,445.00	$2,832,683.75	$232,537.12	$226,423.68	$1,163,803.14	$509,354.10	$122,350.97	$92,286.04	($39,290.38)	($68,083.53)
3	ANTELOPE VALLEY SERVICE CENTER-	775,176.00	$3,084,198.93	$181,506.08	$176,734.26	$1,326,736.22	$610,378.14	$147,220.67	$111,044.58	$204,259.90	$112,136.03
4	PUBLIC LIBRARY-HEADQUARTERS	687,861.00	$3,002,344.27	$297,015.20	$289,206.62	$1,444,426.46	$737,471.56	$190,414.73	$143,624.70	$183,856.23	$101,495.15
5	SHERIFF-CARSON STATION	719,949.00	$2,473,289.91	($31,699.12)	($30,865.74)	$735,612.35	$181,896.78	$117,049.44	$88,287.24	$23,180.83	($22,923.36)
6	PUBLIC LIBRARY-LANCASTER LIBRARY	649,680.00	$2,847,577.77	$286,613.26	$279,078.15	$1,369,553.19	$699,066.98	$127,252.30	$95,982.98	$163,247.96	$87,923.14
7	SHERIFF-NORWALK STATION	388,936.00	$1,395,896.39	$13,470.05	$13,115.92	$457,151.05	$141,991.53	$124,446.21	$93,866.42	$12,515.42	($12,389.54)
8	DPSS-POMONA WS DISTRICT OFFICE	637,196.00	$2,583,747.11	$174,044.75	$169,469.08	$1,045,802.60	$449,858.87	$145,783.17	$109,960.31	$20,515.44	($20,289.19)
9	DPSS-CUDAHY A/P DISTRICT OFFICE	679,043.00	$2,660,397.52	$137,843.69	$134,219.76	$1,122,453.02	$505,950.97	$136,390.60	$102,875.75	$181,501.91	$100,196.04
10	PUBLIC LIBRARY-ROSEMEAD LIBRARY	251,765.00	$1,224,656.37	$173,099.34	$168,548.53	$625,457.21	$334,801.39	$54,154.72	$40,847.44	$21,483.85	$2,191.90
11	MACLAREN CHILDREN'S CENTER	550,624.00	$2,297,612.25	$183,627.42	$178,799.82	$979,374.11	$446,311.41	$231,470.58	$174,592.02	$34,727.01	($4,561.09)
12	AG COMM/WTS & MEAS HQ/	286,538.00	$1,224,344.46	$110,248.73	$107,350.27	$525,278.78	$241,007.90	$102,758.52	$77,507.98	($2,587.29)	($18,137.88)
13	DF KIRBY CENTER-ADMINISTRATION	388,938.00	$1,376,420.13	$3,495.04	$3,403.15	$437,674.79	$127,738.97	$193,751.03	$146,141.18	$12,523.11	($12,383.79)
14	PH-WHITTIER PUBLIC HEALTH CENTER	296,765.00	$1,186,905.94	$72,643.17	$70,733.37	$467,866.95	$194,897.67	$86,101.05	$64,943.70	$5,187.49	($12,782.00)
15	SHERIFF-WEST HOLLYWOOD STATION	264,264.00	$895,943.41	($17,728.37)	($17,262.29)	$296,744.26	$94,252.12	$93,755.75	$70,717.43	$69,567.82	$38,178.82
16	DHS-LONG BEACH COMPREHENSIVE	278,377.00	$999,441.99	$33,733.65	$32,846.78	$360,296.22	$132,565.38	$141,520.90	$106,745.40	$60,723.39	$30,633.69
17	PROBATION-RIO HONDO AREA OFFICE	340,090.00	$1,400,456.57	$103,867.36	$101,136.67	$621,497.67	$295,033.01	$61,068.04	$46,061.98	$77,153.61	$39,690.07
18	DCSS-EAST LOS ANGELES SERVICE	222,573.00	$896,913.11	$57,931.21	$56,408.19	$357,633.87	$151,100.88	$80,025.45	$60,361.04	$3,887.73	($9,588.66)
19	SHERMAN BLOCK SHERIFF'S	428,660.00	$1,440,980.45	($35,064.80)	($34,142.94)	$402,368.58	$81,418.41	$542,961.29	$409,541.07	$7,490.90	($18,464.48)
20	CAPANELLA PARK	74,191.00	$326,411.27	($11,226.18)	($10,931.04)	$136,445.52	$60,509.80	$14,070.41	$10,612.93	($15,867.36)	($16,324.96)
21	HARRY HUFFORD REGISTRAR RECORDER	1,520,721.00	$4,778,637.13	($295,093.87)	($287,335.81)	$1,139,057.07	$87,031.73	$618,637.32	$466,621.46	$97,724.52	($11,211.89)
		11,052,316.00	**$43,016,754.61**	**$2,077,155.06**	**$1,691,781.75**	**$16,926,038.67**	**$7,034,401.86**	**$3,557,081.76**	**$2,682,939.04**	**$1,279,792.91**	**$353,091.57**

NOTES:

1 SoCal Edison 2014 Blended Utility Rate - adjusted with EES Forecasted Rates emailed 5/31/16 for Delivery increase at 2%. 2 PPA $/kWh with $10% demand reduction.

3 Estimated purchase price of system at $22.2M.

4 CCA rates based on EES LACCE's 50% renewables rates estimates on 5/12/16 Presentation. 5 Based on total consumption of all sites (27.89 GWh)

* Net present value (NPV) Discount Rate used for calculations: *2.70%*